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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRINH, TAN H

ART UNIT	PAPER NUMBER
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2684

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/836,829	Applicant(s) TOYA, KEN-ICHI	
	Examiner TAN TRINH	Art Unit 2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-12, 14-18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-12, 14-18 and 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 14-16, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karabins (previously cited) in view of Marko (6,510,317, newly cited by examiner).

Regarding claim 3, Karabins teaches the land mobile-satellite communication system (see fig. 2) comprising: at least one communication satellite station (see fig. 2, satellite 110); a plurality of portable communication terminals for communicating with each other through a communication link to be formed to include at least one communication satellite station (see fig. 2, plurality of portable communication terminals 120 and col. 5, lines 6-21); and a plurality of mobile repeater stations (see col. 5, line 22 the satellite telecommunication repeaters 200) mounted on mobiles located on the earth for repeating a communication in the communication link formed between the portable communication terminals and including at least one communication satellite station (see fig. 2 and fig. 5A-B, and col. 5, lines 22-34); Karabins inherently teaches wherein the mobile repeater stations include a means for communicating with the communication satellite stations by using a carrier wave of higher frequency than a frequency of a carrier wave to be used for communicating with the portable communication terminals (see fig. 2, col. 4, line 61-col. 5, line 34, since the link to satellite communication stations is higher frequency for communication with (satellite frequency band) then the link to portable

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communication terminals (cellular phone frequency band)). Karabins fails to disclose a communication link between any specific one of the communication terminals and any specific one of said at least one communication satellite station can be established via a plurality of communication channels respectively including different ones of the mobile repeater stations as specified in the claim. Marko discloses a communication link between any specific one of the communication terminals 20 (see figure 1) and any specific one of said at least one communication satellite station (see numerals 12, 14) can be established via a plurality of communication channels respectively including different ones of the mobile repeater stations 16 (see column 3 lines 52-58). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Karabins with the above teaching of Marko, in order to improve signal reception quality at the communication terminal by using diversity receiving technique (as suggested by Marko at column 3 lines 55-59).

Regarding claim 14, Karabins teaches wherein the mobiles are vehicle (see fig. 5B).

Regarding claim 15, Karabins teaches wherein power supplies of the vehicle provide power to the mobile repeater station (see col. 8, lines 29-36).

Regarding claim 16, Karabins teaches wherein the mobile repeater stations include high frequency plane antenna (see col. 7, lines 1-55).

Regarding claims 21-23, the combination of Karabins and Marko discloses the claimed limitation (see Marko, column 3 lines 55-58).

3. Claims 2, 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karabins (U.S. Patent No. 5,937,332) in view of Marko and Wesel (U.S. Pub. No. 20040157554).

Regarding claim 2, Karabins as modified by Marko inherently teaches the plurality of the communication satellite stations respectively mounted on a plurality of low earth communication satellites. But Karabins fails to teach each of satellite station including a means for communicating with other the stations through inter-satellite links. However, Wesel teaches each of satellite station including a means for communicating with other the stations through inter-satellite links (see fig. 1, satellite 14 is communicating with satellite 12 and satellite 14 is communicating with satellite 15...). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Karabins system by the providing of the teaching of Wesel on the inter-satellite links thereto in order to provide user with combined with other system to enable increase capacity of the coverage area (see page 2, sections [0028], [0029]).

Regarding claim 6, Karabins teaches wherein the portable communication terminals include a means for communicating with the mobile repeater stations as well as with conventional land mobile communication systems (see fig. 2, portable communication terminals 120, col. 5, lines 10-18).

Regarding claim 7, Karabins teaches wherein the mobile repeater stations include a means for converting at least one of frequency and modulation for communication (see col. 6, lines 11-44), by changing software to allow communication with conventional land mobile communication systems (see col. 6, lines 39-44); Since Karabins teaches the mobile repeater stations detects or monitor the up/down links signal and performs some function as a result of characteristic of the signal, so that is inherency teaching on the by changing software to allow communication with conventional land mobile communication systems.

Regarding claims 8 and 9, the combination of Karabins, Marko and Wesel fails to expressly disclose that the communication satellite stations include a means for transmitting information about their own position; and the mobile repeater stations include means for aiming an antenna beam thereof at the communication satellites according to received information about the position of the communication satellites and a detected position of the mobile repeater stations. The examiner, however, takes position that the claimed limitation is known in the art, because the mobile repeater stations or any satellite communication systems to communication with the satellite stations should aim an antenna beam at the satellites station. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the above combination such that the communication satellite stations include a means for transmitting information about their own position; and the mobile repeater stations include means for aiming an antenna beam thereof at the communication satellites according to received information about the position of the communication satellites and a detected position of the mobile repeater stations, in order to improve the signal reception quality at the satellite stations because the antenna beam of the repeater station is now aiming at the satellite stations.

Regarding claim 10, Wesel further teaches the communication satellite stations include a means for functioning as a Peering points or Proxies to provide accessibility to conventional land mobile telephone systems or Internet (see page 4, section [0042-0043]).

Regarding claim 11, Karabins teaches the data signal link from mobile repeater 220 forward to earth station 130, relayed by satellite station 110, the data received and retransmit (see fig. 2), that is obvious to the storing data received from the portable communication terminals and for functioning as servers.

Regarding claim 12, Karabins teaches wherein the mobile repeater stations include a means for responding to a request from the communication satellite stations and / or portable communication terminals and for functioning as providers (see col. 3, lines 10-51).

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karabins (U.S. Patent No. 5,937,332) in view of Marko and Lorbeck (U.S. Pub. No. 20030114135).

Regarding claim 17, Karabins as modified by Marko teaches wherein communication between the portable communication terminal and the mobile repeater stations. But Karabins fails to show the portable communication terminal and the mobile repeater stations use S or near S frequency band ranging from 1-10 Ghz and communication between the low earth communication satellite station and the mobile repeater station use frequency Ku band. However, Lorbeck shows the portable communication terminal and the mobile repeater stations use S or near S frequency band ranging from 1-10 Ghz (see fig. 2, sessions [0006] and [0034]) and communication between the low earth communication satellite station and the mobile repeater station use frequency Ku band (see figs, 1 and 2, session [0038], lines 7-12). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Karabins system and by the providing of the teaching of Lorbeck with the S and Ku band thereto in order to provide user with the repeater operated on the multiple band.

5. Claims 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karabins (U.S. Patent No. 5,937,332) in view of Marko and Wilson (U.S. Patent No. 6,141,533).

Regarding claim 18, Karabins as modified by Marko teaches the repeater station for transferred data. But Karabins fails to show wherein the mobile repeater stations include the functions of cache, proxy and server for storing transfer data. However, Wilson teaches wherein

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the mobile repeater stations include the functions of cache, proxy and server for storing transfer data (see figs. 2-3, data base 303, col. 7, lines 12-28 and col. 8, lines 13-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Karabins system by the providing of the teaching of Wilson on the data base thereto in order to provide user with data base to act as a proxy for server and transfer data for the subscriber unit with in the coverage are easier (see Wilson col. 7, lines 20-25 and lines 58-67).

Regarding claim 20, Karabins teaches the provided of the signal quality (see col. 2, lines 28-33). But Karabins fails to teach wherein the mobile repeater stations are selectively associated for use base on proximity and signal quality. However, Wilson teaches wherein the mobile repeater stations are selectively associated for use base on proximity and signal quality (see Wilson col. 10, lines 60-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Karabins system by the providing of the teaching of Wilson on quality of service thereto in order to provide user with signal quality on the stronger signal might me selected (see Wilson col. 10, lines 62-63).

Allowable Subject Matter

6. Claims 4-5 are allowed.

Response to Arguments

7. Applicant's arguments with respect to claims 2-12, 14-18 and 20-23 have been considered but are moot in view of the new ground(s) of rejection.

Regarding claim 3, applicant's attention is directed to the rejection to claim 3 above for the reasons why the claim is not patentable over the combination of Karabins and newly-cited Marko.

Regarding claim 2, applicant argues that there is no motivation to combine Wesel with Karabins. The examiner, however, disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine references is found in the reference themselves (see figure 1 of Wesel and paragraph No. [0029]) which clearly shows that the coverage area of the communication system is expanded by using inter-satellite link between satellites 12, 14).

Still regarding claim 2, applicant argues that Wesel fails to disclose inter-satellite link as claimed. The examiner, however, disagrees. Figure 1 of Wesel clearly shows inter-link between satellites 12, 14.

Regarding claim 7, applicant argues that Karabins fails to disclose the claimed limitations. The examiner, however, disagrees. Applicant's attention is directed to Karabins, column 5 lines 39-44 disclosing that the repeater 200 can operate with different conventional communication systems.

Regarding claims 8-9, applicant's attention is directed to the rejection to claim 8 above for the reasons why the claim is not patentable over the applied references.

Regarding claims 11-12, applicant argues that Karabins fails to disclose that the repeater 200 functions as providers as claimed. The examiner, however, disagrees. The claim just

broadly recites “providers” without further defining what kinds of services the providers provide. Since the repeater 200 provides repeating service, Karabins discloses the claimed limitation “providers” with the broadest reasonable interpretations.

Regarding claims 17, 18 and 20, first of all the examiner’s comments of Karabins as set forth above are hereby incorporated. In addition, applicant’s attention is directed to the rejection above for the reasons why the claims are not patentable over the applied references.

Regarding newly-added claims 21-23, applicant’s attention is directed to the rejection to claims 21-23 above for the reasons why the claims are not patentable over the combination of Karabins and newly-cited Marko.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN TRINH whose telephone number is 703-305-5622. The examiner can normally be reached on M-F 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NAY MUANG can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


7-21-2005

NGUYEN T. VO
PRIMARY EXAMINER